REMARKS

Applicant appreciates the continued thorough examination of the present application in the non-final Official Action of February 20, 2009. Applicant also appreciates the Examiner's continued indication that Claims 3, 5-7, 10, 12-14, 17, 19-21, 24, 26-28, 31, 33-35, 38 and 40-42 would be allowable if rewritten in independent form. However, these claims have not been rewritten in independent form because Applicant respectfully submits that all of the claims are patentable over U.S. Patent Application Publication 2005/0260948 to Regulinski et al. in view of U.S. Patent 6,570,858 to Emmons, Jr. et al.

More specifically, as will be shown below, the primary reference, Regulinski et al., actually teaches away from the combination with Emmons, Jr. et al. Moreover, even if properly combined, the combination of Regulinski et al. and Emmons, Jr. et al. simply would not provide the claim recitations. Finally, many of the other dependent claims are separately patentable. Each of these reasons will be described in detail below. Accordingly, Applicant respectfully requests withdrawal of the outstanding rejections and allowance of the present application for the reasons that will be described below.

Applicant also wishes to note that, upon further review, dependent Claims 47 and 53 have been amended as indicated above for consistency with the independent claims from which they depend.

Independent Claims 1, 8, 15, 22, 29 and 36 are Patentable Over Regulinski et al. in View of Emmons, Jr. et al.

Independent Claims 1, 8, 15, 22, 29 and 36 stand rejected under 35 USC § 103(a) over Regulinski et al. in view of Emmons, Jr. et al. Briefly, Claim 1 recites that wireless communications are both transmitted and received by an ancillary terrestrial network over the same downlink satellite radiotelephone frequency in time division duplex (TDD) mode. The remaining independent Claims 8, 15, 22, 29 and 36 contain similar recitations. The Official Action appears to concede, for example, in the paragraph bridging pages 3 and 4 of the Detailed Action, that Regulinski et al. does not describe or suggest these recitations, but alleges that Emmons, Jr. et al. does so. In response, Applicant respectfully submits that Regulinski et al. actually teaches away from these recitations so that it would not be predictable to combine Regulinski et al. with Emmons, Jr. et al. Moreover, even if properly

combined, Emmons, Jr. et al. does not supply the missing teachings. Each of these reasons will now be described in detail.

(1) Regulinski et al. Teaches Away From the Use of the Same Downlink Radiotelephone Frequency in TDD Mode by an Ancillary Terrestrial Network

As noted above, the Official Action has conceded that Regulinski et al. does not describe or suggest the use of a same downlink satellite radiotelephone frequency for transmitting and receiving in TDD, as recited in the present independent claims. However, Regulinski et al. actually describes and illustrates four different frequency allocation plans in Figures 6, 7, 9 and 10, which actually teach away from the recitations of the independent claims, as will now be described.

Specifically, Figure 6 of Regulinski et al. clearly illustrates a terrestrial downlink frequency band and a terrestrial uplink frequency band that use portions of a satellite downlink frequency band. However, the terrestrial downlink frequency band and the terrestrial uplink frequency band are clearly separated from one another in Figure 6, and do not overlap in frequency. Similarly, in Regulinski et al. Figure 7, the terrestrial uplink frequency band overlaps with the satellite uplink frequency band, and the terrestrial downlink frequency overlaps with the satellite downlink frequency band. However, the terrestrial uplink frequency band is clearly separated from the terrestrial downlink frequency band and does not overlap it in frequency. Similarly, in Figure 9 of Regulinski et al., the terrestrial downlink frequency band overlaps with the satellite uplink frequency band, and the terrestrial uplink frequency band overlaps with the satellite downlink frequency band. However, the terrestrial downlink frequency band is separated from the terrestrial uplink frequency band, and does not overlap therewith. Finally, Figure 10 of Regulinski et al. illustrates a terrestrial downlink frequency band and a terrestrial uplink frequency band that overlap with the satellite uplink frequency band. Yet again, however, the terrestrial downlink frequency band is spaced apart from the terrestrial uplink frequency band and does not overlap therewith.

Thus, Regulinski et al. discloses four different embodiments of frequency reuse of satellite band frequencies by a terrestrial network. Each one of the four different embodiments appears to represent frequency reuse of the satellite band frequencies by the terrestrial network based upon Frequency Division Duplex (FDD) principles, wherein the terrestrial downlink frequency band is separate from and non-overlapping with the terrestrial

uplink frequency band. Regulinski et al. does not describe or suggest using the same downlink satellite frequency by a terrestrial network to provide both uplink and downlink communications.

In fact, each of Figures 6, 7, 9 and 10 of Regulinski et al. appears to teach away from using the same satellite frequency by a terrestrial network to provide uplink and downlink communications. Moreover, Paragraph [0180] of Regulinski, et al., which mentions TDD as in certain existing terrestrial networks also does not describe or suggest "an ancillary terrestrial network that is configured to transmit wireless communications to, and receive wireless communications from, the radiotelephones over **the** downlink satellite radiotelephone frequency in a time-division duplex mode", as recited in independent Claim 1, and analogous recitations of the other independent claims.

Thus, although Regulinski et al. appears to recognize the value of configuring a terrestrial network to reuse satellite band frequencies and to provide communications using a variety of protocols, such as GSM, CDMA, FDD and/or TDD, Regulinski et al. does not appear to recognize the value of configuring the terrestrial network to provide both uplink and downlink communications using the same downlink satellite frequency. All of the Regulinski et al. figures that illustrate frequency reuse by the terrestrial network of satellite band frequencies appear to teach against configuring the terrestrial network to provide both uplink and downlink communications using the same downlink satellite frequency, as recited in each of the pending independent claims. Accordingly, Regulinski et al. teaches away from using the same downlink satellite frequency by a terrestrial network to provide uplink and downlink communications. It would therefore not be predictable to combine Regulinski et al. with any other reference that is contrary to the explicit teachings in Figures 6, 7, 9 and 10 therein.

(2) Even if Properly Combined With Regulinski et al., Emmons, Jr. et al. Does Not Supply the Missing Teachings

Applicant has shown above that it would not be predictable to combine Regulinski et al. with any reference that suggests using the same downlink satellite frequency by a terrestrial network to provide uplink and downlink communications, because Regulinski et al. actually teaches away from using the same downlink satellite frequency by a terrestrial network to provide uplink and downlink communications. However, even if these references

were combined, the recitations of the independent claims would not be described because in Emmons, Jr. et al. the terrestrial repeater **30** uses separate downlink and uplink frequency bands **38** and **40**, both of which employ a TDD frame structure. Emmons, Jr. et al. does not suggest using the same downlink radiotelephone frequency band in TDD mode for wireless communications that are both transmitted and received by an ancillary terrestrial network, as recited in Claim 1.

More specifically, Emmons, Jr. et al. describes a system (see, for example, Figure 1), wherein a communications satellite **22** and a terrestrial repeater **30** both operate using separate uplink and downlink frequency bands **40** and **38**, respectively. Note Column 3, lines 53-62 of Emmons, Jr. et al.:

> In a preferred embodiment, repeater **30** is located in first coverage area **34** and is in radio communication with first satellite **22** over a first link **36**. First link **36** includes a first frequency band, downlink frequency band **38**, over which radio communication signals are transmitted from first satellite **22** to repeater **30**. First link **36** also includes a second frequency band, uplink frequency band **40**, over which radio communication signals are transmitted from repeater **30** to satellite **22**. (Emphasis added.)

Thus, the repeater uses separate and distinct uplink and downlink frequency bands. Moreover, as noted at Column 4, lines 8-22 of Emmons, Jr. et al.:

> In the preferred embodiment, first satellite **22** employs a time division duplex (TDD) frame structure, and downlink and uplink frequency bands, **38** and **40**, respectively, encompass a limited portion of the radio frequency (RF) spectrum allocated to first satellite **22**. Downlink and uplink frequency bands, **38** and **40**, may be close together. However, as discussed above, interference between frequency bands **38** and **40** is largely avoided, through the employment of the TDD frame structure at the expense of spectral efficiency. In the preferred embodiment, downlink and uplink frequency bands, **38** and **40**, are effectively reused in second link **42**, to take advantage of the available spectral capacity while mitigating the effects of fading through the use of terrestrial repeater **30**.

Stated succinctly, the terrestrial repeater **30** of Emmons, Jr. et al. uses separate downlink and uplink frequency bands **38** and **40**, and uses a TDD structure therebetween. Thus, Emmons, Jr. et al. does not describe or suggest that wireless communications are both transmitted and received by an ancillary terrestrial network over the same downlink radiotelephone frequency in TDD mode, as recited in the independent claims.

Moreover, Applicant respectfully submits that it would not be obvious to somehow modify the terrestrial repeaters **30** of Emmons to provide the claim recitations because to do so would destroy the essential operability of the terrestrial repeater **30**. In particular, as is well known to those having skill in the art, a repeater is a network device that is used to regenerate or replicate signals that are weakened or distorted by transmission over long distances and/or by interference. Since it is a repeater, the repeater **30** of Emmons, Jr. et al. merely retransmits the downlink signals of the satellite **22** and the uplink signals of the subscriber unit **32** as clearly illustrated by the identical first link **36** between the repeater **30** and the satellite **22** and the second link **42** between the repeater **30** and the subscriber unit **32**. See Figure 1 of Emmons, Jr. et al. reproduced below.

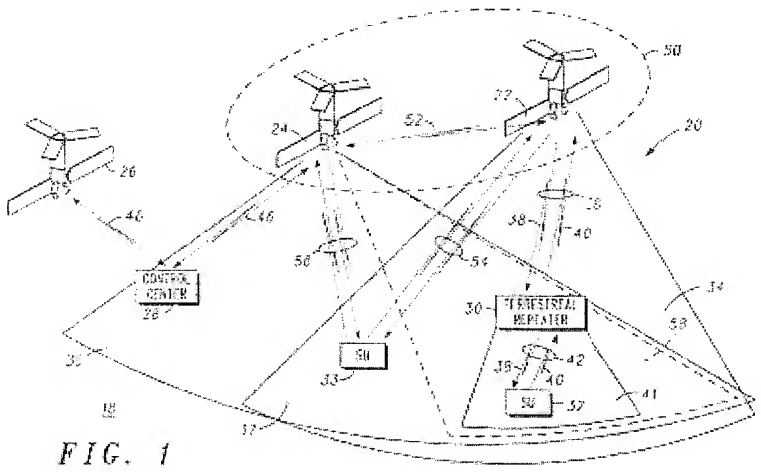

FIG. 1

Accordingly, to reconfigure the second links **42** Emmons, Jr. et al. to provide the recitations of the independent claims of the present application would destroy the operability of the terrestrial repeater **30** of Emmons et al. as a repeater. The combination of Emmons, Jr. et al. and Regulinski et al. therefore would not suggest the claim recitations of the present application and it would not be obvious to somehow modify Emmons, Jr. et al. to provide the claim recitations. Accordingly, the independent claims are patentable over Regulinski et al. in view of Emmons, Jr. et al. for these additional reasons.

In view of the above, all of the independent claims are patentable over Regulinski et al. in view of Emmons, Jr. et al. The dependent claims are patentable at least for the patentability of the independent claims from which they depend.

Many of the Dependent Claims are Separately Patentable

As noted above, the dependent claims are patentable at least for the patentability of the independent claims from which they depend. Moreover, the Examiner has agreed that Claims 3, 5-7, 10, 12-14, 17, 19-21, 24, 26-28, 31, 33-35, 38 and 40-42 are separately patentable. Applicant also respectfully submits that many of the other dependent claims are separately patentable.

For example, dependent Claim 43, 45, 47, 49, 51 and 53 recite that the ancillary terrestrial network is further configured to obtain the wireless communications that are transmitted to, and to provide the wireless communications that are received from, the radiotelephones over a wired terrestrial link. The Detailed Action states at the bottom of page 18 that Regulinski et al. meets these claim recitations. Applicant respectfully submits, however, that if Emmons, Jr. et al. was combined with Regulinski et al. to provide the terrestrial repeater **30** of Emmons, Jr. et al., the unique configuration of this terrestrial repeater **30** would also be incorporated into Regulinski et al. Briefly, the terrestrial repeater **30** of Emmons, Jr. et al. is configured to merely relay the downlink and uplink communications **38** and **40** from the satellite **22** to the subscriber unit **32**, as illustrated, for example, in Figure 1 of Emmons, Jr. et al. and the above-quoted passages thereof. A terrestrial wireless link would be contrary to the intended purposes of the repeater **30** of Emmons, Jr. et al. Thus, if the terrestrial repeater **30** of Emmons, Jr. et al. was combined with Regulinski et al., the ancillary terrestrial network would not be configured to obtain the wireless communications that are transmitted to, and would not be configured to provide the wireless communications that are received from, the radiotelephones over a wired terrestrial link. Accordingly, these claims are independently patentable.

Claims 44, 46, 48, 50, 52 and 54 are also separately patentable. These claims recite that the ancillary terrestrial network is not configured to directly communicate wirelessly with the spaced-based component. In contrast, consistent with its functions as a terrestrial repeater, Emmons, Jr. et al. teaches the opposite of that which is recited in these claims. Moreover, if Emmons, Jr. et al. was combined with Regulinski et al., the terrestrial repeater of the combination would be configured to directly communicate wirelessly with the space-based component, consistent with its function as a satellite repeater. Stated differently, if the repeater **30** of Emmons, Jr. et al. was positioned to not directly communicate with the space-

based component, it would lose its functionality as a repeater. Accordingly, Claims 44, 46, 48, 50, 52 and 54 are also independently patentable.

Applicant also respectfully submits that many of the other dependent claims are separately patentable over Emmons Jr. et al. taken alone and/or in combination with the other secondary references. However, as each of these claims depends from a base claim that is believed to be in condition for allowance, Applicant does not believe that it is necessary to argue the allowability of each dependent claim individually. Applicant does not necessarily concur with the Examiner's interpretation of these claims, nor with the bases for rejection set forth in the Official Action. Applicant therefore reserves the right to address the patentability of these claims individually as necessary in the future.

Conclusion

Applicant has now shown that all the independent claims are patentable over Regulinski et al. in view of Emmons, Jr. et al. Moreover, many of the dependent claims are separately patentable. Accordingly, Applicant respectfully requests withdrawal of the outstanding rejections and allowance of the present application. If, in the opinion of the Examiner, a telephonic conference would expedite the examination of this matter, the Examiner is invited to call the undersigned attorney at (919) 854-1400.

Respectfully submitted,

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Susan E. Freedman
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